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ABSTRACT

The book describes an integrated model of postsecondary education for deaf students developed at California State University, Northridge. The model uses the facilities and services of a regular university, offering special support services only where absolutely needed to insure the success of deaf students. Lectures are translated into sign language, which has been proven to be as efficient as spoken language. In the 15 years since the mainstreaming program began at Northridge, there has been no evidence of any relationship between degree of hearing loss and academic achievement. Other aspects of the Northridge model covered in the report include a survey of attitudes and perceptions of hearing and hearing-impaired students, consumer evaluation of support services, the educational and family backgrounds of the deaf students, a profile of the deaf students during the Fall semester of 1976, a comparison of the majors of deaf and hearing students, and the relationship between degree of hearing loss and academic achievement. A brief history of the National Center on Deafness is also presented.
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**National
Center on Deafness
Publication Series**

Number 3

**Additional Readings on the
Northridge Model of
Postsecondary Education
for Deaf Students.**

Harry J. Murphy
Editor

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FOREWORD

This third book in the National Center on Deafness Publication Series reports further progress on the integrated model of postsecondary education for deaf students that has been operating at CSUN since 1964. It is appropriate that the publication of this book in early 1979 comes during our 15th anniversary of service to deaf students.

Our first publication, *Selected Readings in the Integration of Deaf Students at CSUN*, set down the rationale for the support service model (interpreting, counseling, tutoring, notetaking) and then documented results through research and evaluation studies. The second publication, *Sign Language Theatre and Deaf Theatre: New Definitions and Directions* by Miles and Fant presented a model of theatre appropriate to the experience of deafness. In the current publication we return to the integrated model of postsecondary education and provide additional documentation of results in the most mature program of its kind in the nation. Our intent is to describe our philosophy, services, student population, and results so that others may see what we do, how we do it and with whom, and may decide if full or partial replication is possible and desirable.

We believe in the integrated model. We believe it has benefits not only for handicapped individuals but non-handicapped individuals, and consequently for all of society as well. We believe the evidence given in such publications as these provides strong justification for the various programs of the

National Center on Deafness. Our best evidence of course rests with our graduates: those deaf persons who have earned 80 bachelor's and 240 master's degrees to date. These master's graduates report a 95% placement record in professional areas consistent with the training they received at CSUN. Also, the support services model is cost-effective in that it insures equal access to quality education for deaf students without "bricks and mortar."

Since CSUN serves deaf students from across the nation, it should receive greater support from the federal government. The publication of my congressional testimony, and the testimony of a deaf professor (Fleischer) and deaf-blind graduate (Macdonald) shows our continuing efforts to secure permanent funding so that we can insure those who come to us as freshmen that the needed services will still be available when they are seniors or graduate students.

We hope that publications such as these help us in these efforts. Be assured that the National Center on Deafness will continue to disseminate results of its work. Feel free to contact me personally if I can be of assistance to you in any way.

Ray L. Jones
Director
National Center on Deafness

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SUBCOMMITTEE ON SELECT EDUCATION

Monday, April 25, 1977 - 9:30 A.M., Room 2175 Rayburn House
Office Building

Statement of Dr. Ray L. Jones, Director, National Center on
Deafness, California State University, Northridge

Testimony

I am Dr. Ray L. Jones, Director of the National Center on Deafness at California State University, Northridge. I want to thank you for giving representatives from our university this opportunity of presenting oral and written testimony in support of increased funding to the regional programs serving deaf students as authorized by Section 625 of the Elementary and Secondary Education Act.

In 1964, California State University, Northridge initiated a "model" for serving qualified deaf students who chose to obtain their education in regular classes in a major liberal arts university. This model provides the support services of interpreting, notetaking, tutoring, and counseling to

deaf students. Since 1964, more than 2,000 deaf students have been served in formal academic classes, in national, regional, state and local workshops, and in formal extension classes using this model.

Bachelor's degrees have been awarded to fifty deaf students and one hundred ninety-nine deaf students have successfully completed master's degree programs at this university. Twelve of these deaf students have gone on to complete doctoral study at major universities across the nation.

This record documents the success of this integration "model" as a viable alternative to the traditional segregated special school in providing both undergraduate and graduate education to qualified deaf students.

In these past twelve years:

- I. WE HAVE DEMONSTRATED THAT WHEN GIVEN SUPPORT SERVICES OF INTERPRETING, NOTETAKING, TUTORING AND COUNSELING, QUALIFIED DEAF STUDENTS CAN FUNCTION SUCCESSFULLY IN BOTH UNDERGRADUATE AND IN GRADUATE CLASSES IN A REGULAR UNIVERSITY.

Academic research studies confirm that deaf students at California State University, Northridge are performing about as well as hearing students.

The typical CSUN deaf student is profoundly deaf, has been deaf since birth, is a graduate of a non-residential public high school program, is an upper division or graduate student, has had at least one postsecondary experience before coming to CSUN, and majors in a field that will

prepare him/her for service with other deaf persons.

Dr. Richard Kinney, who is himself both deaf and blind, has said: "Our challenge is to reach the unhandicapped mind behind the handicapped senses."

Through the use of sign language interpreters the unhandicapped minds of deaf and deaf-blind students like Dr. Larry Fleischer and Rod Macdonald are being reached.

- II. WE HAVE DEMONSTRATED THAT DEAF STUDENTS CAN SUCCESSFULLY COMPLETE GRADUATE LEVEL PROFESSIONAL PREPARATION PROGRAMS AND UPON GRADUATION ARE COMPETITIVELY EMPLOYED IN FIELDS FOR WHICH THEY HAVE TRAINED.

Placement studies verify that 95 percent of the 199 deaf students completing master's degrees at CSUN are currently employed in fields for which they have trained.

- III. WE HAVE DEMONSTRATED THAT INTEGRATING DEAF STUDENTS IN UNIVERSITY CLASSES IS COST-EFFECTIVE REQUIRING NO MAJOR INVESTMENT IN "BRICKS AND MORTAR," YET GIVING DEAF STUDENTS FULL ACCESS TO A MULTI-MILLION DOLLAR PHYSICAL PLANT AND FULL ACCESS TO LABORATORIES, CLASSROOMS, DORMITORIES, AND PLAYING FIELDS.

This semester 170 deaf students are enrolled in 485 different classes with a direct federal investment of only \$318,000. No federal funds have been provided to construct or to maintain these classrooms, or to pay the salaries of the 485 university professors who teach these classes.

This very modest investment of federal funds is more than repaid in the increased income taxes that deaf graduates are now paying.

IV. WE HAVE DEMONSTRATED THAT EDUCATION IN INTEGRATED CLASSES GIVES A NEW DIMENSION TO THE EDUCATIONAL EXPERIENCE OF BOTH HEARING AND DEAF STUDENTS.

With deaf students enrolled in 485 university classes and with an average of 20 hearing students in each of these classes almost 10,000 hearing students are sharing their college academic experience with one or more deaf classmates during the current spring semester.

Friendship, mutual understanding and respect develops between hearing and deaf classmates. Each semester more than 300 hearing students enroll in formal university sponsored classes to study sign language in order to communicate with their deaf classmates.

When these 10,000 students graduate and enter the employment market, they will be better prepared to accept a deaf co-worker since they have learned to understand and to appreciate the capabilities of their deaf classmates.

WITH INCREASED FUNDING FOR 1978

Full support services for deaf students at CSUN can be resumed.

Additional qualified deaf students can be accepted.

The number of deaf students with other handicaps such as blindness, cerebral palsy, and orthopedic handicaps can be accepted.

A program to open new careers for the deaf in business and a program to serve more deaf-blind students can be implemented.

A "visiting deaf professorship" which in the past has brought such outstanding deaf scholars as Alan Crammatte, Robert Panara, and Dorothy Miles to the CSUN campus to teach regular classes in Business, English, and Theatre can be resumed.

A program to train deaf and deaf-blind students to successfully use the telephone can be implemented.

It has been said that:

"If you feed a man, he will hunger again.

If you clothe him, his clothes will wear out.

But if you give him access to good education,

He will take care of himself."

With adequate funding to the regional programs serving deaf students, increased numbers of America's deaf citizens can become fully self-supporting and "take care of themselves."

SUBCOMMITTEE ON SELECT EDUCATION

Monday, April 25, 1977 - 9:30 A.M., Room 2175 Rayburn House
Office Building

Statement of Dr. Lawrence R. Fleischer, Assistant Professor
of Special Education, California State University,
Northridge

Testimony

I was born deaf to deaf parents on October 11, 1945, in
Huntington, New York. My childhood was uneventful with full
family acceptance of me and my deafness.

I was educated at the Lexington School for the Deaf in
New York City and the New York School for the Deaf in White
Plains. I received a Bachelor's Degree in mathematics from
Gallaudet College in Washington, D.C.

Just before my graduation from Gallaudet, I applied for
admission to their graduate teacher training program but was
not considered eligible. However, I was then hired as an In-
structor in Mathematics at Gallaudet.

After teaching for a few years, I applied again to Gallaudet's Teacher Preparation Program but was again not eligible.

Without a credential or an advanced degree, there was little opportunity for me to advance myself in higher education. I began to search for more education so I could upgrade myself.

I decided to apply to the Teacher Training Program at California State University, Northridge. It was one of a few programs that would accept a congenitally deaf person.

I was accepted, and with the help of interpreting services, I earned my Master's Degree and Teaching Credential in January, 1972. My grade point average was 3.9.

Coming to Northridge was the best thing that ever happened to me. It was the first time in my life that I attended classes with hearing students. I came to realize that I am no different from others and this realization changed my view of the world. I was capable! I had potential!

I must credit Northridge for putting deaf people on an equal footing with hearing people. This happens because of the support services offered: interpreting, counseling, notetaking, and tutoring. I know that many more deaf people can succeed as I did, if they are given the opportunity.

I pursued all that Northridge had to offer, earning a second Master's Degree in Educational Administration. Upon

completion of the second M.A., I was offered a position as assistant professor of Special Education at Northridge. I was delighted to accept it as another new challenge because I would be teaching both hearing and deaf graduate students. I needed an interpreter to be a successful teacher because I do not have understandable speech. The interpreter says what I sign, as you see here today. Everyone understands this way.

Last year I was the recipient of the university's Distinguished Teaching Award, in recognition of teaching excellence.

I serve on the usual university committees. For example, I am a member of the Affirmative Action/Equal Employment Committee. An interpreter accompanies me to those meetings and I am able to participate fully.

I depended on an interpreter in pursuing my doctoral studies at Brigham Young University where, in 1975, I received a doctorate in Educational Administration.

Without interpreting, I would be in a "dead-end" job, with no hope for advancement and with limited financial security. I doubt if I would have a Master's Degree. I certainly would not have a doctorate degree.

I have a deaf daughter and I want her to have freedom of choice. I want her to be able to achieve, as my wife and I have. I want her to have the best. She'll need interpreting services when the time comes to enjoy the best of life.

I am deeply concerned about the decision by the Bureau of Education for the Handicapped to hold Northridge to the same level of funding in 1977 as in 1976 with no allowance for increased enrollment or increased costs. I ask Congress to substantially increase funding so that deaf students and deaf faculty members may have enough interpreters and other supportive staff to achieve within an integrated situation.

Please do not place limitations on deaf people. Please act to see that the Regional Postsecondary Programs under Section 625 of the Elementary and Secondary Education Act receive substantial increases in funding for 1978, and thereafter.

I would be happy to react to your questions or comments.

SUBCOMMITTEE ON SELECT EDUCATION

Monday, April 25, 1977 - 9:30 A.M., Room 2175 Rayburn House
Office Building

Statement of Roderick J. Macdonald, Senior Computer Program-
mer, Department of Labor, Washington, D.C.

Testimony

In 1962, I enrolled at St. Anselm's College in Manchester, New Hampshire, where I had planned to major in mathematics. Because I could not get math books in braille, I had to change my major. I eventually settled on philosophy because only one book was required for each class and, at my parents' expense, I could usually get it transcribed into braille in time for class. Since I could not hear lectures, I did not attend classes. An interpreter was something I had never heard of at this time. I simply read the books, took the exams, and was happy to be able to pass. I graduated from college with a "C+" grade point average. I was satisfied with this because I felt I had done the best I could under the circumstances.

Although I had a college degree, the only job my rehabilitation counselor could find for me was sorting nails in a Goodwill Industry' sheltered workshop. I lasted about six months, then decided I wanted more out of life than that. I went to a computer programming school, then finally landed my current position with the Department of Labor.

For the past six years, I have been employed by the Department of Labor here in Washington, and am now a senior computer programmer. I have always had a deep concern for people, and hope to combine this with my aptitude for computer work by specializing in and training other handicapped persons as programmers. With this in mind, I sought additional training to help me reach this goal.

I knew of only two schools which might be interested in accepting me as a student: Gallaudet College and California State University, Northridge (CSUN). I applied to both. I was accepted for one course at Gallaudet but only on the condition that I provide my own interpreter and the required course materials in braille. Since I could not get any of these materials transcribed in time, I had to withdraw from the course.

In January of 1975, I enrolled at CSUN where they offered full support services for me. I have never worked so hard as I did in those eight months at CSUN. Sometimes I had in excess of 40 hours of lectures in a week, plus up to eight hours of homework at night. This was difficult because I had to get information through a manual communication method with which I still was not fully expert. Yet I got an "A" in every

class, every paper, and every examination. My "C+" grade point average as an undergraduate became an "A" grade point average as a graduate student. This was made possible because of the support services provided by CSUN. I had two interpreters and a notetaker attending each class with me. Notes were later transcribed into braille, as were other required materials. This was my first chance to compete with other students on a near equal basis, and the elation I felt at this opportunity, the fierce pride I felt in succeeding, are emotions I cannot describe accurately in words.

I have talked with many deaf and deaf-blind students and know their feelings of frustration, even despair, when they know they can succeed, but when the opportunity and support are not provided. It is most probable that we would never have had a Helen Keller if she had not had an Anne Sullivan to provide the support services she needed.

There exists today, more than ever before, a need for adequate funding of the regional educational programs providing this type of support services. Unfortunately, it costs a lot of money to support deaf and deaf-blind students.

Mr. Chairman, with your help and the help of this committee, these services will be provided for us.

Personal Background

Mr. Roderick J. Macdonald, a native of Massachusetts, has been legally blind since age three, and lost his hearing on a progressive basis beginning at the age of ten. He has

not been able to hear classroom lectures since he was a sophomore in high school. He is now profoundly deaf. Mr. Macdonald attended several public schools before transferring, at the age of ten, to the Perkins School for the Blind in Watertown, Massachusetts. Currently, Mr. Macdonald is a Senior Computer Programmer at the Department of Labor in Washington, D.C. He has a B.A. Degree from St. Anselm's College in Manchester, New Hampshire, and is completing a Master's Degree at California State University, Northridge.

THE NORTHRIDGE MODEL FOR HIGHER EDUCATION OF DEAF STUDENTS

Ray L. Jones

Harry J. Murphy

In May of 1977, for the 14th consecutive year, commencement exercises at California State University, Northridge (CSUN) were conducted in two languages: English and American Sign Language. Following a tradition begun in 1964, an interpreter translated the full ceremony into American Sign Language for the 47 deaf graduates who were recognized, as well as their deaf friends and relatives in the audience. With this year's graduating class, a total of 73 deaf students had earned bachelor's degrees at CSUN, and 221 deaf students had earned master's degrees since the first two deaf students came to campus in 1964.

In the first row, one master's graduate--Rod Macdonald--followed the remarks of university president, Dr. James W. Cleary, in alternating ways: sometimes by placing his two hands directly on the hands of a personal interpreter who sat directly in front of him, sometimes through letter-by-letter

spelling of words into his left palm, and sometimes through reading braille via a "Teletouch" machine. Rod is both deaf and blind.

Dr. Cleary recognized Rod as a student who had maintained a perfect "A" average in earning his master's degree in educational administration through the prestigious National Leadership Training Program in the Area of the Deaf-Blind. Earlier in the year, he had appeared on national television while speaking before a senate subcommittee on education of the handicapped in Washington, D.C. Dr. Cleary noted that Rod's words of strong support for equality of educational opportunity for the handicapped opened the minds of the senators and of millions of television viewers across the country and resulted in an extension of the Education of the Handicapped Act for another five years. Rod, the third deaf-blind student to graduate from Northridge, received a well-deserved standing ovation from the 10,000 persons in attendance.

Rod and 169 deaf students at CSUN attend classes alongside 28,000 non-handicapped students in a fully integrated setting at this liberal arts university in suburban Los Angeles. A combination of state and federal grants and contracts allows the university's National Center on Deafness to offer innovative training programs and support services--interpreting, notetaking, counseling, tutoring, and aural rehabilitation--to deaf students.

Philosophy

The Northridge Model of integrated postsecondary education for deaf students has been practiced since 1964, long before the current, popular "mainstreaming" movement was initiated. The model uses the facilities and services of a regular university, offering special support services only where absolutely needed to insure the success of deaf students. Consequently, the model is highly cost-effective.

The model has been replicated in scores of universities, community colleges, and technical-vocational institutions around the country. It is also of great interest in other countries. For example, the authors have consulted in Japan and a steady stream of foreign visitors come to the Northridge campus.

The Northridge Model assumes that:

1. The qualified deaf student is best served in the mainstream of local tax-supported institutions for higher education.
2. Deaf students can successfully compete with hearing peers through the use of support services.
3. Deaf students should have choices from among colleges and universities, course offerings, and major fields to meet their needs.
4. Ties with family, friends, and community are best maintained if the deaf student continues his education reasonably close to his place of residence.

5. Opportunities for employment will be greatly enhanced if instructors known to the community endorse the competence of the deaf student in specific employment situations.

Profile of Deaf Students at CSUN

The typical student

- is profoundly deaf, rather than hard-of-hearing
- has been deaf from birth
- is a graduate of a day class, a day school for the deaf, or a regular public school rather than a residential school for the deaf
- is slightly older than the usual undergraduate or graduate student on campus
- has attended another postsecondary institution prior to having matriculated at CSUN
- uses an interpreter and notetaking services in his/her classes
- aspires to become a teacher of the deaf.

Results

- The sign language interpretation of lecture material is as efficient as spoken language.
- Hearing students who have had classes with deaf students tend to better understand the problems deaf individuals face, are more likely to learn sign language, and are more receptive to employing and/or working with deaf persons, than hearing students who

have not had classes with deaf students.

- There is no relationship between degree of hearing loss and academic achievement. In other words, deaf students achieve at about the same rate as hard-of-hearing students.
- 95% of deaf master's degree graduates find professional employment in areas compatible with their training which is largely in the area of education and rehabilitation.

Summary

Since 1964 when the first deaf students came to campus, CSUN has developed and refined a model of education which has successfully served about 700 deaf college students and hundreds more community deaf persons in special workshops. The model is mature and there is a growing body of evidence that it is highly effective.

In the final analysis, a support services model offers a deaf student a wider choice of a curriculum, or of particular colleges and universities he may wish to attend. Since these choices are normal ones in the life of a non-handicapped individual, we see no reason why such choices should not be available also to deaf persons across America.

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ATTITUDES AND PERCEPTIONS OF HEARING AND HEARING-IMPAIRED
STUDENTS IN AN INTEGRATED COLLEGE SETTING

Paul McIntire

The purpose of this study was to determine if there were statistically significant differences between groups of hearing-impaired and hearing students at California State University, Northridge regarding attitudes and perceptions about career objectives, academic success, socialization/integration, and self-esteem.

During the Spring semester of 1977 at California State University, Northridge (CSUN), 169 hearing-impaired students registered for classes as did approximately 25,000 hearing students. CSUN is the nation's largest postsecondary program which integrates hearing-impaired students into regular university classes. These students are supported by such special services as interpreting, notetaking, tutoring, and counseling.

This unique situation lends itself to many research questions which may be answered by comparing differences between hearing-impaired and hearing students on the variable(s)

of interest to the researcher(s). Because they share the same college experience, it is particularly meaningful to do comparative studies which have immediate implications for the direct improvement of services to the hearing-impaired population as well as to offer descriptive data which will benefit other colleges and universities attempting to follow what has been called "The Northridge Plan" (Jones and Murphy, 1977). Consequently, contributions to the literature are being made by CSUN National Center on Deafness staff and graduate students to disseminate findings on the employment of hearing-impaired graduates of CSUN (Gonzales, 1974; Jones, 1975), academic achievement of hearing-impaired students (Fankhauser, 1975; Murphy, 1976), attitudes of hearing students and/or faculty to hearing-impaired students (Jacobs, 1971; Randall, 1974), and a comparison of majors of hearing-impaired and hearing students (Murphy and Jacobs, 1977).

The developing literature pointed to many untouched variables of interest to this researcher, particularly comparisons of attitudes and perceptions about commonly shared experiences. It was felt that a study comparing attitudes and perceptions of hearing-impaired and hearing groups of CSUN students on the variables of Career Objectives, Academic Success, Socialization/Integration, and Self-Esteem would be non-duplicative of existing literature, and would shed more light on the dynamics of integration as practiced at Northridge as well as at an increasing number of postsecondary programs across the country.

For purposes of this study a null hypothesis was proposed where it was predicted that no statistically significant differences would be found between the attitudes and perceptions of hearing-impaired and hearing students in the areas of career objectives, academic success, socialization/integration, and self-esteem.

A 26-item Likert-scale questionnaire was devised across four areas, defined as follows:

Career Objectives - vocational goals, choice, opportunities, preparation, and limitations.

Academic Success - necessity for success, academic capabilities, performance in regard to others, course difficulty, study requirements, need for tutorial services.

Socialization/Integration - social relations with others, apprehensions, self-consciousness, public speaking, first encounters, wanting to be liked, and trying to be liked by others.

Self-Esteem - feelings of superiority toward others, respect of others, responsibility for mistakes, feelings of discouragement, feeling good, and thinking highly about oneself.

Two representative samples of the research groups were formed (N=61, hearing-impaired sample; N=70, hearing sample). The hearing-impaired sample was obtained from students who registered with Support Services for Deaf Students, a component of the National Center on Deafness. The hearing sample was obtained from lower division and upper division psychology classes. All subjects were undergraduate students.

A two-part questionnaire was administered to the two research groups after it had been field-tested on a group of hearing-impaired and hearing graduate students in The National Leadership Training Program in the Area of the Deaf, and revised accordingly. The first part solicited demographic data; the second part consisted of the 26-item questionnaire.

The questionnaire was administered live in psychology classes at CSUN to hearing students, and by mail to the hearing-impaired students. The questions were phrased in either an affirmative (16) or negative (10) format. The questions were randomly ordered to avoid a response bias. Subjects were asked to indicate to what degree they agreed or disagreed on each statement. Ordinal scales using a Likert-type rating scale appeared beneath each question. The scale ranged from 1-5, strongly agree to strongly disagree.

The Chi-Square measure of statistical significance was used to analyze the resulting data. The Chi-Square technique compared the frequencies of responses at each point on the scale used in this study and answered the question as to whether frequencies observed differed from some theoretical or expected population frequency, in this case hearing-impaired vs. hearing.

An acceptable alpha level of $\geq .10$ was chosen because of the exploratory nature of this study. It was felt that the .10 level of confidence would maximize the identification of trends in the data.

Results

Demographic information was compared between the two research groups on these five variables: sex, class standing, grade point average, age, and ethnic origin. No significant differences were found in the distribution of sexes, undergraduate class standing, and ethnic origin. Statistically significant differences were found on the variables of grade point average where the hearing group self-reported higher grades, and age, where the hearing-impaired group was found to be somewhat older.

The results obtained from the 26-item questionnaire are displayed in Table 1.

Significant differences at or beyond the criterion level of $\alpha \geq .10$ were found on eight of 26 statements. Three significant differences were found among statements in the attitude/perceptual category of Career Objectives, four were found in the category of Academic Success, none in the category, Socialization/Integration, and one in the Self-Esteem category.

On the topic of Career Objectives, both samples tended to agree that they have definite career objectives, have career objectives that are realistic and that they like their career choice. The hearing sample felt more limited in their career choices and wondered about whether other people would regard them as a success in their future career more than the hearing-impaired sample to a significant degree. There was a significant difference between the two samples concerning course selection and career objectives. The hearing-impaired sample agreed more that they take courses that will prepare them for their career objectives than did the hearing sample.

Table 1

Results of 26-Item Questionnaire

Statement Number	Statement	Attitude/Perceptual Category	X ² Value	Level of Significance
1	I have definite career objectives.	Career	4.45	NS
2	Academic success is necessary for my career objectives.	Career	10.73	.05
3	My teachers expect better performance of me than my fellow students.	Career	9.29	.10
4	I worry about how I get along with other people.	Career	4.96	NS
5	I feel superior to my classmates.	Career	2.89	NS
6	I feel limited in my career opportunities.	Career	9.05	.10
7	I am capable of getting A's in all of my classes.	Academic	4.46	NS
8	I feel ill at ease when I enter a room filled with people whom I don't know.	Academic	4.46	NS
9	I think people look up to me and respect me.	Academic	17.33	.01
10	I take courses that will prepare me for my career objectives.	Academic	18.91	.01
11	My classes are more difficult than I had anticipated.	Academic	10.20	.10
12	I am very self-conscious.	Academic	29.24	.01
13	I feel that I am responsible for my mistakes.	Academic	3.41	NS
14	My career objectives are realistic.	Soc/Int	4.93	NS
15	I study less than my fellow students.	Soc/Int	2.33	NS
16	I fear speaking before a public audience.	Soc/Int	4.99	NS
17	I often feel discouraged.	Soc/Int	2.42	NS
18	I like my career choice.	Soc/Int	3.35	NS
19	I do not need tutorial services to be successful in school.	Soc/Int	2.52	NS
20	Upon meeting a stranger I am the first one to say hello.	Soc/Int	2.46	NS
21	I feel good about myself.	Self-Esteem	2.35	NS
22	I wonder about whether other people will regard me as a success in my future career.	Self-Esteem	2.94	NS
23	I do not need to cheat in school.	Self-Esteem	5.63	NS
24	I want other people to like me.	Self-Esteem	5.11	NS
25	I think highly about myself.	Self-Esteem	5.43	NS
26	I try to be liked by other people.	Self-Esteem	12.20	.05

Concerning Academic Success, both samples strongly agreed that they did not need to cheat in school. The hearing and hearing-impaired also tended to strongly agree that academic success was necessary for their career objectives. Both samples expressed neutral feelings with regards to academic performance with respect to their fellow students. The hearing sample agreed significantly more than the hearing-impaired sample that they were capable of getting A's in all of their classes and did not need tutorial services to be successful in school. The hearing sample also agreed significantly more that they did not really need to study as much as the hearing-impaired sample felt they needed to with regards to their fellow students. The hearing-impaired sample agreed significantly more than the hearing sample that their classes were more difficult than they had anticipated.

No significant differences were found between the two samples with regards to statements concerning Socialization/Integration. Both samples generally responded with neutral feelings towards worrying about how they get along with other people, feeling ill at ease when entering a room filled with strange people, and being self-conscious.

Both samples tended to strongly agree with wanting and trying to be liked by other people. The two samples were evenly distributed across the five response categories with regards to the fear of speaking before a public audience and being the first to say hello when meeting a stranger.

Of all the statements regarding Self-Esteem, the only one to result in a significant difference between the two

samples referred to thinking highly about oneself. The hearing-impaired sample was neutral in response to that statement, 44%, while the hearing sample disagreed, 52%. The hearing-impaired and hearing samples were relatively neutral in feelings towards being superior to their classmates, often feeling discouraged, thinking people look up to them and respect them, and feeling responsible for their mistakes. Both samples agreed with the statement referring to feeling good about themselves. It is interesting to note that both samples agreed that they felt good about themselves but they tended to disagree that they felt highly about themselves.

Discussion

This study was conducted to investigate the attitudes and perceptions of hearing and hearing-impaired students in an integrated college setting. The central concern of this study was to ascertain any significant differences in attitudes and perceptions between the two groups with regards to Career Objectives, Academic Success, Socialization/Integration, and Self-Esteem.

Results of the Chi-Square test indicated significant differences between the two samples with regards to age, GPA, and some statements concerning Career Objectives and Academic Success. No significant differences were found between the two samples regarding statements about Socialization/Integration and Self-Esteem with the exception of one statement relating to Self-Esteem.

There were no significant differences between the hearing and hearing-impaired samples regarding sex, academic standing and ethnicity. Both samples tended to be female, freshman-sophomore oriented. Also both samples were largely of Anglo ethnicity which is supported by the observation that the majority of students attending CSUN are of Anglo origin.

A significant difference was observed in GPA and age between the two samples. The hearing-impaired sample indicated a significantly lower GPA than the hearing sample. This indication of a lower GPA was also reinforced in their more negative responses regarding academic success. The two samples differed significantly in median age. The hearing-impaired sample was significantly older than their hearing counterparts. This finding is supported by Murphy and Jacobs (1979). They found when compiling a profile of hearing-impaired students at CSUN, that the hearing-impaired student population was somewhat older. This finding of older hearing-impaired subjects might be due to the fact that the educational process for the hearing-impaired is somewhat longer and/or more difficult, which might explain their lower GPA indications and more negative feelings towards academic success.

Recognizing some differences between the hearing and hearing-impaired samples, a discussion concerning attitudes and perceptions regarding Career Objectives, Academic Success, Socialization/Integration, and Self-Esteem follows.

Career Objectives

In light of the literature regarding careers and vocational opportunities concerning the hearing-impaired, it was felt that there could have been a significant difference between the two samples in terms of feeling limited in career choices, being regarded as a success in their vocational field, etc., with the hearing-impaired being somewhat more negative in their responses. However, this does not seem to be the case, in fact with regards to this study, completely opposite.

Both samples tended to agree that they have career objectives, that their career objectives are realistic and that they like their career choice. Yet to a significant degree, the hearing-impaired did not feel as "limited" in their career opportunities and "wondered" less about others regarding them as a success in their future career than did the hearing subjects. These feelings may stem from the fact that the majority of hearing-impaired students at CSUN are heavily oriented towards a career in education (Murphy and Jacobs, 1977). Murphy and Jacobs indicated that it would seem that undergraduate deaf students take a little longer time to declare an undergraduate major, but that when they do, they apparently decide on a career in education. Thus, they may perceive many opportunities within the scope of education but are not looking beyond those limits. An explanation might be that today qualified deaf teachers of the deaf are very much in demand in the educational market, and in a study by Jones (1975) it was shown that 95% of the deaf graduates of the CSUN Teacher Preparation

Program find appropriate employment. The hearing-impaired perceiving their opportunities within the field of education agreed significantly more than the hearing that they take courses which will prepare them for their career choice. Murphy and Jacobs (1977) alluded to this by saying the hearing-impaired tend to major in the School of Humanities at the undergraduate level where they receive preparatory work required for graduate work within the School of Education. These findings might also explain why the hearing-impaired subjects "wondered" less about being considered a success by others than their hearing counterparts. For if one feels unlimited in his/her career opportunities and is taking courses in preparation for a career in a job demanding field, one might not "wonder" as much as one who feels limited in career opportunities and is not taking specific courses for a chosen career.

Academic Success

From the results of this study it was found that the hearing-impaired subjects felt less capable of academic success than the hearing subjects. Both samples expressed neutral feelings with regards to academic performance with respect to their fellow students, yet the hearing-impaired subjects self-reported that they felt less capable, to a significant degree, of getting A's in all of their classes than the hearing subjects. Also the hearing-impaired subjects agreed significantly more than the hearing sample that they needed to study more than their fellow students and that their classes were more difficult than they had anticipated. These findings

are supported by Miller (1971) who found that hearing-impaired students discovered college more difficult academically than they had anticipated. These same students in Miller's study expressed a reduction in self-confidence as a result of finding a college academically more difficult, which might explain the more negative attitudes expressed by the hearing-impaired subjects in this study with regard to academic success.

Both samples agreed that academic success is necessary for their career objectives, yet it is interesting to note that although the hearing-impaired subjects do find academic success more difficult, they do not "wonder" about being considered a success in their careers as much as their hearing counterparts, even though they agree that academic success is necessary for their career objectives. Again, these feelings might be due in part to the fact that the hearing-impaired are guided on a path towards a career in education and thus tend to be more secure in their educational goals and objectives than their fellow hearing students. Although the hearing-impaired subjects indicated a significantly greater need for tutorial services to be successful in school, both samples very strongly agreed that they did not need to cheat in school in order to be successful academically.

Socialization/Integration

The literature indicated certain problems with regard to the hearing-impaired concerning socialization and integration, yet no significant differences were observed between the two samples. Both hearing-impaired and hearing subjects were

in strong agreement with regard to wanting and trying to be liked by other people. Both samples had neutral feelings towards worrying about how they get along with other people, being self-conscious, and largely indifferent with regard to the fear of speaking before a public audience and being the first to say hello when meeting a stranger.

In light of these findings and findings in the literature, it seems that problems encountered by the hearing-impaired are also encountered by the hearing and are not unique to either group in this study. An explanation for these findings also might be that the hearing and hearing-impaired were interpreting these statements with regards to their own particular environment.

Self-Esteem

Problems of stereotyping and identity discussed in the literature concerning the hearing-impaired was not supported by the findings in this study. In fact, the only statement to create a significant difference between the two samples dealt with attitudes of feeling highly about oneself with which the hearing-impaired agreed significantly more than the hearing. This finding along with another statement concerning feeling good about oneself for which both samples agreed, seem to show that literature findings concerning problems of self-denial and feelings of being different are not prevalent among this group of hearing-impaired students. Again, problems encountered by the hearing-impaired seem not to be as unique but are shared

by the hearing as well. This is supported by the similar feelings expressed by both samples regarding feelings of discouragement, thinking people look up to them and respect them, and feeling responsible for their mistakes.

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CONSUMER EVALUATION OF SUPPORT SERVICES

Patricia K. Heffernan

The major purpose of this study was to evaluate deaf students' perceptions of seven services (interpreting, paid notetaking, volunteer notetaking, notetaking/interpreting, counseling, tutoring, and aural rehabilitation) available to them at California State University, Northridge (CSUN). Another purpose was to present an evaluation model of consumer reaction to support services.

The formal integration of deaf students into regular postsecondary institutions is a relatively new concept dating back to the early 1960's. The current literature has more to say about programs and services rendered than about the evaluation of such services and even less about evaluation of these services directly by the consumers.

For example, Stuckless and Enders (1971) surveyed deaf students at the National Technical Institute for the Deaf (NTID) about interpreting, notetaking, and tutoring services. The survey centered on factual information about quantity of

service provided and the technical merit of the service or the skill of the provider.

Guttadore (1974) discussed six support services at the Community College of Denver. While noting that interpreters assess students in interpreting situations, there was no mention of consumer evaluation of interpreters.

The Eckman Center, a private educational consulting firm assisted the National Center on Deafness at CSUN in developing a format for consumer evaluation of services. During the 1973-1974 and 1974-1975 academic years this "client survey instrument" was used (The Eckman Center, 1975). This instrument underwent one revision in 1976 and another in 1977. The final form, now called "Consumer Questionnaire" differed in many respects from the original "client survey instrument" hence no comparison of data is appropriate here. It should be noted that the "client survey instrument" provided the National Center on Deafness with excellent feedback and many service modifications were made on the basis of that information. The results were considered public information and deaf students as well as each service unit were provided with summaries of each year's survey. The current "Consumer Questionnaire" is seen as an improved instrument to be administered over a number of years.

Methodology

The "client survey instrument" was revised. Ambiguous language was reworded, a five-point Likert scale replaced a three-point scale, newly added services were included, and the

titles of each service were more carefully delineated. The services included interpreting (I), paid notetaking (PN), volunteer notetaking (VN), notetaking/interpreting (NI), counseling (C), tutoring (T), and aural rehabilitation (AR). The instrument was expanded from an original seven, to nineteen statements.

The statements were designed to ascertain needs, feelings, and/or attitudes of deaf consumers in a uniform manner across all services. The statements were positively worded with common core sentences.

A preliminary version of the Consumer Questionnaire was distributed to 19 members of the National Leadership Training Program in the Area of the Deaf, Class of '77, at CSUN. Seven hearing-impaired members completed the preliminary questionnaire and made comments. Twelve hearing students also reacted to the preliminary questionnaire. It was revised accordingly.

The final Consumer Questionnaire contained 19 statements about each service and the individuals who provided it. Statements dealt with:

<u>Statement Numbers</u>	<u>Topics</u>
1 - 6	The individuals who provided the service
7 - 9	The consumer's comfort while using the service
10 - 11	The ability to obtain the service
12 - 13	The degree to which the service enabled the consumer to compete academically
14 - 15	The degree to which the service enabled the consumer to socialize

Statement
Numbers

Topics

- | | |
|---------|---|
| 16 - 17 | The degree to which the service enabled the consumer to participate in extracurricular activities |
| 18 - 19 | The degree to which the service enabled the client to maintain and/or improve his/her grades. |

The Consumer Questionnaire was printed and mailed to each of 169 full- and part-time, undergraduate and graduate deaf students who registered through Support Services for Deaf Students during the Spring semester of 1977.

Findings

Findings were based upon 78 usable returns (46% usable return rate). Since the deaf consumers used one or more services in different combinations, the responses for each service varied. Responses were tabulated as a mean score of the total responses for the statement.

To report the findings of this project, the 19 statements were divided into seven categories (See Table 1), which related to either individuals who provided the service or the service itself. The first category rated the individuals who provided the service. There were three subcategories: understanding the needs and feelings of the consumer, knowledge and ability to do their job, and skill in communication. This category and its subcategories were represented by statements one through six.

The second category rated how comfortable the consumers were in using the service. This category was represented by statements 7 through 9.

The third category rated the ease of ability to obtain the service and receive attention during the service period. This was represented by statements 10 and 11.

The fourth category rated the degree to which the consumers felt the service enabled them to compete academically. This was represented by statements 12 and 13.

The fifth category rated the degree to which the consumers felt the service enabled them to socialize. This category was represented by statements 14 and 15.

The sixth category rated the degree to which the consumers felt the service enabled them to participate in extra-curricular activities. This category was represented by statements 16 and 17.

The last category rated the degree to which the consumers felt the service enabled them to maintain and/or improve their grades, and was represented by statements 18 and 19.

Findings are summarized in Table 1 for the categories stated above. The mean scores for each statement and service are reported in the data.

Table 1 also presents the overall mean score for the column of the scores taken from the complete response means.

Table 1
The Mean Scores of Consumers' Responses Per Category For Each Service

Category	Statements	I	PN	VN	NI	C	T	AR
1. Individuals providing the service	1-6	3.966	3.333	3.368	3.472	3.724	3.914	4.648
a. Understanding	1-2	3.833	3.167	3.380	3.611	3.700	3.783	4.500
b. Skill	3-5	3.963	3.349	3.325	3.300	3.627	3.885	4.704
c. Communication	6	4.243	3.619	3.477	3.722	4.061	4.261	4.778
2. Comfort using the service	7-9	4.230	4.048	3.874	3.683	3.806	3.966	4.519
3. Obtaining service and attention	10-11	3.999	3.460	3.567	3.941	3.980	3.935	4.224
4. Academic competition	12-13	3.925	3.332	3.616	3.441	3.638	3.781	4.361
5. Socialization	14-15	3.326	2.659	2.782	3.271	3.221	3.267	3.375
6. Extracurricular activities	16-17	3.308	2.392	2.588	2.691	2.893	2.616	3.072
7. Grades	18-19	3.791	3.285	3.663	3.392	2.944	3.859	4.000
47 Overall mean score of the service		3.888	3.319	3.300	3.557	3.630	3.679	4.696

1 = Low degree of satisfaction;

5 = High degree of satisfaction.

Discussion

The number of responses to the 19 statements varied for each service. The trend of responses was highest through the first 11 statements, fell through statements 12 through 17, and rose again in statements 18 and 19. A possible explanation for this is that by not responding the consumers were indicating that the statements on academic competition, socializing and extracurricular activities had less relevance to services rendered. This is supported by various consumer responses written in on the questionnaires, such as: "NA" (not applicable), "not always" and "the reason I disagree with questions 14-17 is that I don't need any service to help me socialize and participate in extracurricular activities!"

The overall mean scores of the services reported in the findings fell between 3.3 and 4.096. Almost all of the scores for the 7 categories fell between the 3.0 and 4.8 range (the exceptions will be discussed later). This would seem to indicate general satisfaction on the part of the consumers: (1) with the individuals providing the services, and (2) with the services themselves. Since the scores were generally close and positive, only those scores which are above or below this clustering will be discussed further..

Interpreter Service

The consumers expressed a high degree of confidence in the individuals providing this service and in the service itself. They expressed a high degree of satisfaction with

the individual's skill on the job and ability to communicate. They expressed comfort using an interpreter, ease in obtaining the service and attention, and feelings that it aided academic competition.

Paid Notetaker Service

The consumers expressed comfort using this service in front of others. They disagreed slightly that a paid notetaker helped them in socializing and extracurricular activities. This trend through several services may be due in part, as stated before, to the students' belief that there was less or little correlation between those two factors and the service. One statement revealed that the consumers felt that the paid notetakers did not understand their feelings. This may be explained by the status of the individual as paid and not as a volunteer. The consumer may believe that the individual is performing the service more from personal financial need than to aid the hearing-impaired student, as does the volunteer notetaker. (No other service had a category for both paid and volunteer individuals). This also may result from less interaction between the paid notetaker and the hearing-impaired student.

Volunteer Notetaker Service

The consumers disagreed slightly that the service helped them in socializing and extracurricular activities.

Notetaker Interpreter Service

The consumers felt an ease in obtaining the service and attention. They disagreed slightly that the service helped them in extracurricular activities.

Counseling Service

Consumers felt that counselors communicated well and that the service could be obtained with full attention for the time requested. The consumers disagreed very slightly that the service helped them with extracurricular activities and grades. The students may have felt that there was little correlation between counseling and grades because most counseling was of a personal nature.

Tutoring Service

The consumers felt a high degree of confidence in individual tutors. This was manifested primarily in communication. The consumers were comfortable using the service and felt an ease in obtaining the service and attention. They disagreed slightly that the service helped them with extracurricular activities.

Aural Rehabilitation Service

This service was rated higher than any other service. The overall mean was 4.096, with five of the seven categories rated over 4.0. One possible explanation for this is that the service was offered on an extremely limited basis, and students were chosen according to criteria of ability and interest.

Notetaker Interpreter Service

The consumers felt an ease in obtaining the service and attention. They disagreed slightly that the service helped them in extracurricular activities.

Counseling Service

Consumers felt that counselors communicated well and that the service could be obtained with full attention for the time requested. The consumers disagreed very slightly that the service helped them with extracurricular activities and grades. The students may have felt that there was little correlation between counseling and grades because most counseling was of a personal nature.

Tutoring Service

The consumers felt a high degree of confidence in individual tutors. This was manifested primarily in communication. The consumers were comfortable using the service and felt an ease in obtaining the service and attention. They disagreed slightly that the service helped them with extracurricular activities.

Aural Rehabilitator Service

This service was rated higher than any other service. The overall mean was 4.096, with 5 of the 7 categories rated over 4.0. One possible explanation for this is that the service was offered on an extremely limited basis, and students were chosen according to criteria of ability and interest.

Therefore, the students responding may have had a strong interest, more motivation, and have attached a value to the service before obtaining it.

The consumers agreed that the individuals providing the services of interpreting, counseling, tutoring, and aural rehabilitation communicated well with them. These obtained the highest ratings among the seven services. This would be expected due to the requirements for and the nature of the service. In the remaining three categories the consumers tended to agree that these providers also communicated relatively well.

Statements 8, 9, and 12-17 were paired. Each pair contained like statements about the service but under differing conditions: among hearing-impaired students or among hearing students. The statement responses were compared to see if the students perceived the service as more comfortable and enabling better functioning among hearing-impaired or hearing students. Responses indicated the students perceived the services as more comfortable and enabling better functioning among hearing-impaired students in 12 of the 28 situations. Conversely, responses indicated the students perceived the services as more comfortable and enabling better functioning among hearing students in 16 of the 28 situations. However, the consumers always rated the service of counseling as more comfortable and enabling better functioning among hearing-impaired students. And, the consumers always rated the services of interpreting and notetaking/interpreting as

more comfortable and enabling better functioning among hearing students.

A possible explanation for the comfort and enabling better functioning among hearing-impaired students for those who responded to the statement for the service of counseling may be that those deaf students' primary group of association is among other deaf students. Consumers indicated the personal counseling they received helped them to function among hearing-impaired students most.

A possible explanation for the comfort and enabling better functioning among hearing students for the services of interpreting and notetaking/interpreting may be that the two services are used primarily in situations (classes) which require communication and comprehension between hearing-impaired students and hearing students and classmates. Therefore, the nature of the situation and the responsibility of the service is to enable the hearing-impaired students to function among hearing people.

Responses to question 18 showed that consumers felt that all services helped them maintain their grades. There was agreement across all services except for the counselor service. This may be due to the fact that most counseling is of a personal nature, rather than being career or academic counseling. There was less agreement and a lower mean for the services in improving grades although responses for five services tended to agree that these services improved grades.

While organizing the findings, computerized statistical printouts were examined. Bipolar clusters of scores were found in 12 cases. The responses to statements on socializing and extracurricular activities resulted in bipolar clusters in 10 of the 12 cases. Although the mean scores in all but one of the 10 cases usually averaged well above 3.0, the clustering occurred under "agree" (4) and "disagree" (2). The lack of single mode responses to statements on socializing and extracurricular activities seems to support the explanation that the consumers, as a group, did not see a relevance between statements 12-17 and each of the seven services.

Responses to statements 4 (counseling services) and 10 (paid notetaking services) also revealed bipolar clustering. The consumers either clustered under "strongly disagree" or under "agree" and "strongly agree" in response to the statement on obtaining the service of paid notetaking. A possible explanation for this is that while many students were able to receive the service, substantial numbers of others were not.

The last bipolar clustering case occurred relating to the skill of the counselor. The last bipolar clustering case was not a strong one. (The responses to "The people who provide this service are skilled in this area" were: strongly disagree, 5; disagree, 11; not sure, 4; agree, 11; and strongly agree, 19.) Two possible explanations exist for this. First, the consumer may not see his/her particular counselor as being particularly skilled. Second, during the process of counseling, the consumer may have encountered difficult understandings and

realizations and this may have shown up in the responses as dissatisfaction with the counseling itself.

Summary, Conclusions, and Recommendations

Purpose

The purpose of this study was to evaluate the hearing-impaired students' (consumers') perceptions of seven services offered to them at California State University, Northridge. Those seven services were: interpreting, paid notetaking, volunteer notetaking, notetaking/interpreting (notetaker with communication skills), counseling, tutoring, and aural rehabilitation.

Subjects

The subjects were the 169 hearing-impaired students who were matriculated as full- or part-time students at CSUN during Spring semester, 1977. They were graduate and undergraduate students. Of the 169, 81 returned the questionnaires and 78 of those were used in the findings.

Procedure

The Consumer Questionnaire consisted of 19 statements for the 7 services. The questionnaires were sent through the mail to each student. The students were instructed to fill out and return the questionnaires in stamped, self-addressed envelopes enclosed.

The students were asked to agree or disagree on a five-point Likert scale with each of the 19 statements for the service(s) they used.

Conclusions

The major finding of this study was that there was a high degree of satisfaction on the part of consumers with the individuals providing the support services and the services themselves.

The responses indicated that all services helped the consumers maintain their grades. To a lesser degree, the consumers agreed that the services helped them to improve their grades.

The consumers tended to agree that the providers of all seven services communicated well with them. They agreed more strongly that the interpreters, counselors, tutors, and aural rehabilitators communicated better than paid notetakers, volunteer notetakers and notetaker/interpreters.

Responses to four paired statements on whether the services were more comfortable and enabled better functioning among hearing-impaired students or hearing students showed an almost even division. The consumers perceived the services as more comfortable and enabling better functioning among hearing-impaired students in 12 of the 28 situations, and more comfortable and enabling better functioning among hearing students in 16 of the 28 situations. However, the consumers always rated the counseling service as more comfortable and enabling better functioning among hearing-impaired students. And, they always rated the interpreting and notetaking/interpreting services as more comfortable and enabling better functioning among hearing students.

The consumers responded less often and tended to disagree that academic competition, and socialization and participation in extracurricular activities were facilitated by the services.

1. Which of the following services at SSDS did you use, even if only once, during the Spring 1976 semester? ___ Interpreter ___ Paid Notetaker ___ Volunteer Notetaker ___ Notetaker/Interpreter ___ Counseling ___ Tutoring
2. Which services have you used at any time since you have been at CSUN? ___ Interpreter ___ Paid Notetaker ___ Volunteer Notetaker ___ Notetaker/Interpreter ___ Counseling ___ Tutoring
3. Think back to the Spring 1976 semester and, for the services you used, please tell us how you feel about them.

For each question check (X) one: "Always," "Sometimes," or "Never."

The people who provide this service seem to have enough time to give me all of the help I need.

The people who provide this service seem to really understand what kind of assistance is important to me.

I worry about the skill of the people providing this service.

I am not comfortable using this service in front of hearing people.

This service has made a difference in my experience at CSUN.

I have been able to get the assistance I need when I need it.

The people who provide this service can communicate well with me.

INTERPRETER			PAID NOTETAKER			VOLUNTEER NOTETAKER			NOTETAKER/INTERPRETER			COUNSELING			TUTORING		
Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never	Always	Sometimes	Never

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THE EDUCATIONAL AND FAMILY BACKGROUNDS OF DEAF STUDENTS
ATTENDING CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

W. Edward Ingham

Little research has been conducted on those factors which influence the success of deaf people in integrated postsecondary settings. In particular, there is a dearth of literature concerning the influence of parents of deaf students. The purpose of this study was to identify factors in the educational and family backgrounds of deaf students enrolled in the integrated program at California State University, Northridge (CSUN) in the hope that these findings may be helpful to those who counsel and educate parents of the deaf.

The population of deaf students at CSUN is unique. The distinguishing characteristic is that these students have made the choice to pursue their postsecondary education in the company of hearing and deaf peers, rather than in the company of deaf peers alone.

Other characteristics are: these students are basically prelingually and profoundly deaf with a mean better ear average (BEA) hearing loss of 88 decibels (Murphy and Jacobs, 1979). These deaf students achieve academically at about the same rate as the general university population (Murphy, 1976). Given these characteristics, some professionals consider this group to be the "cream of the crop" of deaf college students in the nation.

This unique group attracts researchers with various interests and a growing number of publications about CSUN are finding their way into the literature each year. To date, however, none have explored the influence of parents. Hence the need for this study.

Methodology

Deaf students enrolled at CSUN during the Spring semester of 1977 were sent a four page questionnaire along with a cover letter and self-addressed, stamped envelope. Responses were tabulated for those students who had at least an 80 dB hearing loss average in the better ear and whose onset of deafness occurred before reaching the age of seven years. A total of 56 students, or 33.5% of the population of 176, returned usable questionnaires. The responses of these 56 students are considered in this study.

The fact that some of the questions were of a personal nature and the questionnaire requested the student's name may have had some negative influence on the number of questionnaires returned.

Results

Eighteen males and 38 females responded; about 70% indicated age of onset of deafness at birth; the BEA for the group was 94.9 dB; 37.5% of the students had at least one other family member with a hearing impairment; the mean age at which schooling commenced was 3.75 years; 92.9% indicated that at least one parent was a high school graduate; 50% indicated that at least one parent was a college graduate; the group typically received additional educational assistance outside the classroom at varying educational levels from interpreters/notetakers, teachers, parents, siblings, tutors, classmates, etc.

There was almost even distribution between attendance at residential vs. non-residential types of high school; about 70% of the students lived at home; there was an even distribution of communication modes used in schools attended: oral only vs. sign only or total communication; the primary mode of communication used while talking with parents and siblings was oral communication only.

The questionnaire had three additional components:

1. Closeness (comfortability) with immediate family (4 items).
2. Communication ability with members of immediate family and other people (5 items).
3. Personal opinions on a variety of social, family, and personal questions (27 items).

With the category of "Closeness (comfortability) with immediate family," respondents indicated their choice across a five-point scale ranging from -2 (not close at all) to +2 (very close). Mean scores with a positive range from 0.94 to 1.23 indicate a closeness with family members, with respondents feeling closest, in this order: to mother, brother, father, sister.

With the category of "Communications ability with members of immediate family and other people," respondents indicated their choice across a five-point scale ranging from -2 (very poorly) to +2 (very well). Mean scores with a positive range from 0.78 to 1.33 indicate that deaf students understand communications from parents, siblings, and others, with highest degrees of understanding in this order: mother, sister, brother, father, other people.

The next category was "Personal opinions on a variety of social, family, and personal questions." Respondents indicated their choices across a five-point scale ranging from -2 (disagree very much) to +2 (agree very much). The individual items and mean scores are presented below:

<u>ITEM</u>	<u>$\bar{X}$</u>
1. I enjoy meeting people.	1.75
2. My parents were interested in hearing about my parties and dates.	1.07
3. My deafness is an emotional handicap.	-0.43
4. I like myself very much.	1.46

<u>ITEM</u>	<u>$\bar{X}$</u>
5. My parents let me plan my own activities.	1.54
6. I often went out with my parents.	0.93
7. I enjoyed going to school.	1.36
8. My parents often told me jokes.	0.55
9. My parents told me lies.	-1.14
10. When I was with my family, I enjoyed them.	1.20
11. My deafness is a communications handicap.	0.30
12. I often feel sorry for myself because I am deaf.	-1.27
13. My parents believe that I am very capable in whatever I attempt to do.	1.42
14. I kept secrets from my parents.	0.33
15. When I was with my family, they talked with me.	1.12
16. I believe that I am a social equal to hearing people.	0.95
17. My parents allowed me to question their thinking.	1.14
18. My deafness is a physical handicap.	-0.41
19. My parents often let me express my own point of view.	1.27
20. My parents told me they were the absolute boss.	-0.61
21. My parents allowed me to attempt to solve difficult problems on my own.	1.14

<u>ITEM</u>	<u>$\bar{X}$</u>
22. My parents have included me in their planning for vacations.	1.25
23. I am educationally handicapped because I am deaf.	-0.36
24. I got along well with my parents.	1.30
25. My parents have treated me as an equal to themselves.	1.11
26. My parents have considered my ideas in making family decisions.	0.82
27. I often shared my innermost thoughts with my parents.	0.71

Discussion

As can be seen from the information presented here, respondents were more likely to be prelingually and profoundly deaf females (2:1 ratio, females over males). These characteristics influence interpretation of the data particularly in those respects where the emotional environment, including such things as feelings of closeness and quality of communication, are concerned. The differences in our culture regarding the rearing of female vs. male children, particularly handicapped female vs. male children need full exploration before definitive statements about some findings presented here can be made with confidence.

In general, the data support the view that confident (as evidenced by selecting an integrated educational environment), successful (as evidenced by about equal academic achievement

with non-handicapped peers), prelingually deaf college students have experienced an emotionally close home environment in which a high degree of communication was understood.

These deaf persons have responded in a positive way to statements which indicate they enjoy meeting people, like themselves, enjoyed going to school, and feel they are social equals to hearing people. They responded in a negative way to statements about deafness being an emotional handicap, feeling sorry for themselves because they were deaf, seeing deafness as a physical handicap, and being educationally handicapped because of deafness. This pattern of responses about these statements would seem to point to a stable, confident group of individuals who seem to like themselves and other people and who have no "hangups" about deafness.

Their parents were interested in hearing about their parties and dates, let them plan their own activities, took their deaf children out with them, joked with them, believed they were capable, talked with their child, allowed them to question parental thinking, allowed them to express their own points of view, allowed them to attempt to solve difficult problems on their own, included them in vacation planning, treated them as equals, and considered their ideas in making family decisions.

The deaf respondents enjoyed being with the family, felt they got along well with their parents and felt free to

share innermost thoughts with their parents. They did not think their parents told them lies, though like all children, they sometimes kept secrets from their parents. The parents did not make their deaf children feel that they (the parents) were the "absolute boss."

Summary

The pattern here is consistent. This group of deaf students has enjoyed a healthy and supportive family life. The results indicate that they were contributing family members. A high degree of self-worth seems to be the result.

Insights gained while carrying out this study lead to the following recommendations for future research: that the sex variable be considered closely, and that students be interviewed personally rather than complete mailed questionnaires to probe more deeply the many layers of emotional closeness with family members and the more specific kinds of communication that went on in the family circle.

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A PROFILE OF CSUN DEAF STUDENTS

FALL SEMESTER, 1976

Harry J. Murphy

L. Ronald Jacobs

The purpose of this publication is to describe the deaf student population at California State University, Northridge (CSUN). For the Fall semester of 1976, 171 deaf students registered through Support Services for Deaf Students. Support Services for Deaf Students, a unit of the National Center on Deafness at CSUN, processes admissions applications of deaf applicants, conducts a registration and orientation for deaf students, and delivers such "support services" as interpreting, counseling, notetaking, tutoring, and aural rehabilitation.

The program at CSUN follows the "integrated" model of postsecondary education for deaf individuals whereby deaf students take their classes alongside hearing students. Regular university instructors have their lectures translated into

sign language by an interpreter, and/or a notetaker takes notes for the deaf student. In addition to the interpreting and notetaking services, Support Services for Deaf Students provides personal, academic, and career counseling from counselors trained in working with deaf persons; tutoring in any curriculum area, and aural rehabilitation services.

What are the characteristics of those deaf college students who choose to pursue liberal arts studies in the company of hearing students rather than in an institution where they share the college experience only with other deaf students? This question is of interest to the field in general, and more specifically to deaf students, their rehabilitation and school counselors, educators, and parents as personal decisions about the choice of a college are considered.

CSUN is a large liberal arts university in suburban Los Angeles (formerly known as San Fernando Valley State College). For the Fall semester of 1976, 171 deaf students were included in the total university enrollment of 26,981. The university awards bachelor's and master's degrees, but does not award doctorates. As of September 1, 1976, 47 deaf persons had earned bachelor's degrees and 198 deaf students had earned 202 master's degrees (four students earned two master's degrees each).

Profile Variable 1. Age and Sex

The deaf student population, of whom 85 were male and 86 were female, ranged in age from 16 to 81, with the mean age for all 171 registrants being 25.5 years (mode age = 22).

The mean for undergraduate students was 23 years; the mean for graduate students was 31 years.

Profile Variable 2. Audiometric Data

At the time of the writing of this report (December, 1976), 135 current audiograms (79% of the 171 registrants) were available for analysis.

If a student failed to respond at a given frequency, data were coded for statistical purposes in this way: 250 Hz = 90 dB; 500, 1,000, 2,000, 4,000 Hz = 110 dB. In other words, a "no response" was recorded as maximum intensity at all frequencies.

Results: Left Ear Average (LEA) = 90.2; Right Ear Average (REA) = 89.5; Better Ear Average (BEA) = 86.9.

As can be seen from these data, the deaf registrants of Support Services for Deaf Students at CSUN may be described audiometrically as a profoundly deaf group (Furth, 1973).

In previous studies (Murphy, 1977) conducted among the same population at CSUN it was found that there was no correlation between degree of hearing loss and academic achievement, leading to the conclusion that deaf students do as well academically as do hard-of-hearing students. It was also found that the deaf students as a group achieved at about the same rate as the hearing students on campus.

Profile Variable 3. Other Handicapping Conditions

Among the 171 registrants were 16 who self-reported a secondary handicap in addition to their deafness. Table 1

gives the conditions.

Table 1

Other Handicapping Conditions

Other Handicap	N
Vision	4*
Cerebral Palsy	7
Facial Paralysis	2
Orthopedic Involvement	<u>3</u>
	16

*In addition to a vision problem, one student also reported an orthopedic handicap.

As can be seen from data given above, 16 of 171 students, or about 10% of all deaf registrants, report a secondary handicap.

Profile Variable 4. Age of Onset

Students report age of onset of hearing loss at the time they first apply to the university. Table 2 gives this information.

As can be seen from Table 2, 72% of those reporting a specific age of onset (100 of 139) indicated prelingual deafness (birth - 2 years).

Profile Variable 5. Residence

The program at CSUN serves deaf students from across the nation, and from several foreign countries. The fact that

Table 2

Age of Onset

Age	N
Birth - 2 years	100
3 - 7 years	24
8 - 15 years	6
16+ years	9
Unknown or Not Reported	<u>32</u>
	171

the deaf student body is drawn from so many different states is strong justification for CSUN to seek federal, rather than just state, funding to support the program. In fact, Support Services for Deaf Students receives funding from a combination of federal and state sources.

In order to give an accurate picture of geographical representation, two considerations were used: (1) place of birth, and (2) state of high school graduation.

It was found that deaf students were born in 36 different states, the District of Columbia, and 6 foreign countries, and graduated from high school in 32 states, the District of Columbia, and 3 foreign countries.

Profile Variable 6. Type of High School Background

A simple differentiation of high school programs is: residential, and other-than-residential. In the latter category are day schools and day classes with educational

programs and/or support services for the deaf. Also included here are "regular" high schools which deaf students may have attended which had neither a special program nor support services.

Table 3

Type of High School

Type	
Residential	56 (33%)
Other-Than-Residential	<u>115</u> (67%)
	171 (100%)

A further breakdown shows that 35 undergraduate students, and 21 graduate students graduated from a residential school for the deaf whereas 88 undergraduate and 27 graduate students graduated from an other-than-residential school.

Students graduating from a residential school were not interviewed to determine if they actually resided at the school or if they were day pupils there. Nor were interviews conducted among the other-than-residential group to determine the exact nature of their high school experience, so no conclusions can be drawn on these issues. The only conclusion to be drawn at this time is that about 1/3 of the CSUN deaf population graduated from a residential high school for the deaf.

Profile Variable 7. Previous Postsecondary Experience

With the number of postsecondary programs for deaf students increasing steadily, it is becoming common for students to come to CSUN after an earlier postsecondary experience elsewhere. In fact, Table 4 shows that "transferring" to CSUN is the rule, rather than the exception.

Table 4

Previous Postsecondary Experience

Undergraduates Transferring Directly From:		Graduates BA Earned From:	
	<u>N</u>	<u>College</u>	<u>N</u>
Gallaudet	18	Gallaudet	29
NTID/RIT	10	NTID/RIT	0
28 Postsecondary Institutions	51*	CSUN	11
High School	<u>44</u>	8 Other Colleges	<u>8</u>
	123		48**

*While these 51 students transferred directly from 28 different institutions, they had in fact attended 56 different institutions in all. It is not uncommon for a deaf student to have had two or more college experiences prior to coming to CSUN.

**Three of the 48 also had a first master's degree, earned at the University of Arizona, Butler University, and CSUN, respectively.

Table 4 shows that 64% of the undergraduate students have had a previous postsecondary experience, and that 77% of the graduate students earned their undergraduate degree at an institution other than CSUN.

Profile Variable 8. Class Standing

CSUN defines class standing (freshman, sophomore, etc.) by the number of semester units completed.

Graduate students are defined as those who possess a bachelor's degree and who have been accepted for graduate study by a department of the university and by the Office of Graduate Studies.

Table 5
Class Standing, CSUN Deaf Students

Class Standing	N	Units Completed
Freshmen	31 (18.1%)	0 - 29
Sophomores	21 (12.3%)	30 - 59
Juniors	45 (26.3%)	60 - 89
Seniors	26 (15.2%)	90+
Graduates	<u>48</u> (28.1%)	
	171 (100.0%)	

Fifty-one students registered at CSUN for the first time in September, 1976 as freshmen or transfer students; 120 students had been previously registered at the university.

Profile Variable 9. Number of Units Carried

CSUN operates on a semester (as opposed to a quarter) unit basis. Students carrying 12 or more units are considered full-time students.

The mean number of semester units carried was 12.3 with a range of 3 - 23; 123 deaf students carried 12 or more units while 48 students carried less than 12 units.

Profile Variable 10. Enrollment in Classes

Approximately 4,500 different class sections were offered by CSUN during the Fall, 1976 semester. Deaf students were enrolled in 463 of these classes, or about 10% of all classes offered. When one realizes that deaf students constitute only a little more than 1/2 of 1% of the student body and yet enroll in about 10% of all classes, it can be seen that the degree of integration is very high.

In fact, if one realizes that there may be on the average about 20 hearing students in every class where deaf students are enrolled, then more than 9,000 hearing students shared the college academic experience with one or more deaf students during the Fall semester of 1976.

Summary

1. A total of 171 deaf students registered with Support Services for Deaf Students for the Fall, 1976 semester of whom 85 were male and 86 were female. The mean age for undergraduate students was 23 years; the mean for graduate students was 31 years.

2. The population may be described audiometrically as a profoundly deaf group.
3. Sixteen students (10% of the population) self-reported other handicapping conditions including vision, cerebral palsy, facial paralysis, and orthopedic involvement.
4. Prelingual deafness was indicated by 72% of those (100 of 139) reporting age of onset of hearing loss.
5. Deaf students were born in 36 different states, the District of Columbia, and 6 foreign countries, and graduated from high schools in 32 states, the District of Columbia, and 3 foreign countries.
6. One-third of the students graduated from a residential school for the deaf; two-thirds graduated from day schools, day classes, or "regular" high schools.
7. Most students have had a previous postsecondary experience before coming to CSUN: 64% of the undergraduate students transferred to CSUN after attendance elsewhere, and 77% of the graduate students earned their undergraduate degree at an institution other than CSUN.
8. Class standing was as follows: Freshmen, 18.1%; Sophomores, 12.3%; Juniors, 26.3%; Seniors, 15.2%; and Graduate Students, 28.1%.
9. The mean number of semester units carried was 12.3, with a range of 3 - 23; 123 students carried 12 or more units while 48 students carried less than 12 units.

10. Deaf students enrolled in 463 classes (about 10% of all classes offered by the university) and about 9,000 hearing students shared the college academic experience with one or more deaf students during the Fall semester of 1976.

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A COMPARISON OF THE MAJORS OF DEAF AND HEARING STUDENTS AT
CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

Harry J. Murphy

L. Ronald Jacobs

Since 1964 when two deaf students enrolled in a graduate program in educational administration, California State University, Northridge (CSUN) has offered an *integrated* college experience where deaf students pursue their education in the company of hearing students. With 171 deaf students registered for the Fall semester 1976, CSUN has become the nation's largest integrated liberal arts program.

This educational format is consistent with the contemporary concept of "mainstreaming," i.e., educating handicapped people in public institutions where they and non-handicapped individuals can freely associate with each other.

Among the approximately 27,000 students who registered at CSUN for the Fall semester of 1976 were 123 undergraduate and 48 graduate deaf students. In a typical class there is a deaf student or two, perhaps 25 hearing students, a professor,

and an interpreter. The interpreter translates the spoken word of the professor into sign language for the benefit of the deaf student, and "reverse-interprets" the signs of the deaf person into spoken language for the benefit of the professor and the hearing classmates. In addition to interpreting, other support services include notetaking, counseling, and tutoring. Support services are administered through a sub-unit of the National Center on Deafness at CSUN, Support Services for Deaf Students.

Support Services for Deaf Students is supported by the California university and colleges system, the California State Department of Rehabilitation, and Bureau of Education for the Handicapped (Office of Education, Department of Health, Education and Welfare). The mix of state and federal funds reflects the demographic make-up of the deaf student body as about half are from California while the other half are from 32 states, the District of Columbia, and several foreign countries.

The California state university and colleges system supports certain administrative costs of the National Center on Deafness, of which Support Services for Deaf Students is a part. In 1976, the contract with the California State Department of Rehabilitation was for \$150,000, whereas the grant from Bureau of Education for the Handicapped was for \$318,205. Funding levels are not directly contingent upon a per student formula, but are arrived at through submission of annual proposals and a negotiation process.

While this report covers 171 deaf registrants during the Fall semester of 1976, it should be noted that 270 individual

deaf students were served by Support Services for Deaf Students during calendar year 1976 through the Spring semester, two summer sessions, the Fall semester, and extension division courses.

The support services delivered to deaf students are considered "excess costs," i.e., special expenses over and above the usual cost of instruction. Since the program follows the integrated model there are no special teachers, nor separate classes (one exception is a class in freshman English) exclusively for deaf students.

Working closely with counselors (two of the four are themselves deaf) in Support Services for Deaf Students, deaf students make course selections and preregister in advance of the other students on campus.

Deaf students select their courses in conjunction with academic counseling, and indicate a preference for either an interpreter or a notetaker. Some voluntarily elect no service. Generally, a "no service" selection is made by a hard-of-hearing, rather than a deaf, student and is typically made in a physical education class. During the Fall semester, 100% of student requests for service were met. Deaf students registered in 463 classes, or about 10% of all classes offered by the university during this semester.

The university is a major training center for interpreters and more than 300 hearing students enroll each semester in a 14-unit sequence of sign language and interpreting courses. A pool of about 100 part-time interpreters are available to meet the service needs of the deaf students. They are paid by the hour, at rates between \$3.50 and \$8.50 per hour.

We have met some challenging situations. A deaf student in a health science class was required to observe in the emergency room of a busy Los Angeles hospital between 1:00 A.M. and 5:00 A.M. An interpreter was available to him for the entire time.

In addition to the pool of interpreters there are also pools of part-time notetakers (about 70), and tutors (about 30). Notetakers are generally beginners in sign language who aspire to become interpreters as their skills develop. Tutors may be fellow deaf students, or hearing students with or without a knowledge of sign language. An interpreter is assigned to a tutoring situation, if requested. Four counselors with special training in deafness staff a "Student Personnel Services" section of Support Services for Deaf Students.

The model of integrated postsecondary education for the deaf is relatively new, dating back perhaps to the early 1960's. Initially, there was concern that the inherent language problems associated with deafness may not allow deaf students to compete academically with hearing persons in a "regular" university. There was also concern that the medium of sign language may not be sophisticated enough to convey college lectures. However, recent research by Murphy (1976) has shown that CSUN deaf students achieve academically at about the same rate as their hearing peers, and a study by Jacobs (1976) has demonstrated the efficiency of sign language as a medium to convey college lectures. Perhaps a more definitive answer is to be found in the numbers of deaf persons who have earned degrees at CSUN over the years: during the period January 1, 1964-

September 1, 1976, 47 deaf students had earned bachelor's degrees, and 198 deaf students had earned 202 master's degrees (four deaf students earned two master's degrees each).

Purpose

The purpose of this study was to compare the academic majors (by school) of deaf and hearing students registered at CSUN for the Fall semester of 1976.

This information may be of interest to the following:

1. *Registrars and admissions officers of colleges and universities where deaf students may be enrolled.* Deaf students at CSUN come from more than 30 different states; 64% of the undergraduates have had previous postsecondary experiences in 58 different institutions of higher learning across America, and 77% of the graduate deaf students earned their undergraduate degrees at institutions other than CSUN.

This information clearly points out that deaf students are matriculating in a surprisingly large number of colleges and universities, and may be invisible to college registrars and admissions officers.

2. *Student personnel administrators.* Colleges and universities are seeing a rapidly increasing number of deaf and other handicapped individuals, consistent with the national trend of "mainstreaming."

Descriptive information from such pioneer programs as CSUN could be incorporated into the long-range educational and occupational plans of deaf students currently enrolled in other institutions.

3. *Deaf students themselves, their parents, and high school guidance counselors.* The information presented here may be especially helpful in the advisement of individual deaf students who are at this time in high school or college programs.

Ideally, all persons with professional responsibilities for academic and career advisement of deaf students should be aware of the various community college, liberal arts, and vocational/technical opportunities open to deaf students today.

Methodology

Departments and Schools

Majors of deaf and hearing students registered for the Fall, 1976 semester were grouped under eight schools of the university. Another category is "Special Major," a separate designation for academic programs which crosses several schools and which students negotiate with several departments as highly individualized courses of study. Also, many students simply state "Undecided" as a choice.

The distribution of departments within each school is as follows:

1. *School of the Arts.* Departments: Art General Studies, Art History, Art Three-Dimensional Media, Art Two-Dimensional Media, Music, and Theatre.

2. *School of Business Administration and Economics.* Departments: Accounting, Business Law, Economics, Finance, Real Estate and Insurance, Management, Management Science, Marketing, Office Administration, and Business Education.

3. *School of Communication and Professional Studies.*

Departments: Child Development, Communicative Disorders, Health Science, Home Economics, Journalism, Physical Education, Radio-Television-Film, Recreation and Leisure Studies, and Speech Communication.

4. *School of Education.* Departments: Administration

and Supervision and Higher Education, Educational Psychology, Elementary Education, Secondary Education, Social and Philosophical Foundations, and Special Education.

5. *School of Engineering and Computer Science.* De-

partments: Computer Science, Electrical and Electronics Engineering, Mechanics and Materials, and Thermal-Fluid Systems.

6. *School of Humanities.* Departments: Chicano Stu-

dies, English, Foreign Languages and Literatures, Philosophy, Religious Studies, and Liberal Studies.

7. *School of Science and Mathematics.* Departments:

Biology, Chemistry, Geosciences, Mathematics, Physics, and Astronomy.

8. *School of Social and Behavioral Science.* Depart-

ments: Anthropology, Geography, History, Pan African Studies, Political Science, Psychology, and Sociology.

Information was obtained from the CSUN Admissions and Records Office showing the distribution of all registered students in each category. Support Services for Deaf Students had records of the majors of 171 deaf students and the two

lists were analyzed together in order to arrive at Table 1 as follows:

Table 1
Comparison of the Majors of Deaf and
Hearing Students at CSUN

School	Undergraduate Students		Graduate Students	
	Deaf	Hearing	Deaf	Hearing
Art	11	1,815	1	302
Business	12	4,165	1	481
Communication	21	3,873	0	777
Education	*	*	32	1,164
Engineering	6	1,050	0	218
Humanities	21	2,130	1	203
Science/Math	10	1,543	1	245
Social/Behav	14	3,263	2	516
Special Major	0	73	0	9
Undecided	<u>28</u>	<u>2,735</u>	<u>10</u>	<u>2,272</u>
	123	20,647	48	6,187

*In California, a student may Major in Education only at the graduate level.

Discussion

An analysis of Table 1 clearly points to a number of trends. The most striking of these is in the School of Education at the graduate level where a significantly greater proportion of deaf than hearing students are enrolled. This may be so for the following reasons:

1. CSUN has a national reputation for an outstanding graduate program in the Department of Special Education which attracts deaf and hearing students alike to train as teachers of the deaf.

2. The Department of Educational Administration offers additional graduate training for teachers who wish to become administrators and is the host department to a prestigious national scholarship program, the National Leadership Training Program in the Area of the Deaf. This program attracted the first two deaf students to campus in 1964.

3. Today, qualified deaf teachers of the deaf are very much in demand in the educational job market. In fact, a recent study by Jones (1975) shows that 95% of the deaf graduates of the CSUN Teacher Preparation Program find appropriate employment.

It can also be seen that a significantly greater proportion of deaf than hearing undergraduate students enroll in the School of Humanities. Of the 21 deaf students enrolled in this school, 19 are enrolled in the Department of Liberal Studies. About half of the 2,130 hearing undergraduates enroll in the same department.

This finding is clearly related to the one cited above, in that the liberal studies program is the usual undergraduate preparation for those wishing to pursue graduate work in the School of Education. The general pattern of courses in liberal studies is prescribed by the Teacher Preparation and Licensing Law of 1970 for multiple subjects (elementary) credential.

Table 1 indicates that a significantly lower proportion of deaf than hearing graduate students are in the "Undecided" category. This is probably explained by the popularity of the teacher training program in attracting deaf persons who have previously made a firm career decision to become teachers of the deaf.

Also, the data point out that deaf undergraduates seem more undecided about a major than their hearing peers, but at the graduate level hearing students are more undecided than are deaf students. It would seem that undergraduate deaf students take a little longer time to declare an undergraduate major, but when they do, they apparently decide on a career in education, and prepare for this at the undergraduate level through course work in the School of Humanities. By the time they reach the graduate level, they major to a great degree in the School of Education.

Again, the data indicate that a significantly higher proportion of hearing than deaf students enroll at the undergraduate level in the School of Business. Again, it appears that the preference for a career in education is an explanation for this finding. Also, a traditional pattern of employment of deaf persons (Crammatte, 1968) seems to be in evidence, as deaf college graduates are more likely to find employment in the public social service field, rather than the private, profit-making sector. Most deaf persons work for a governmental agency of some sort (school districts, federal agencies, etc.).

The business world offers a hearing person with a bachelor's degree a more likely opportunity of obtaining employment. While the same opportunity ideally exists for deaf people, it is not, at present, a reality. While deaf people have successfully found employment in such fields as teaching and counseling, and to a lesser extent such technological fields as chemistry, engineering, and microbiology, big business remains relatively untouched.

Deaf and hearing students enroll in about the same proportion at the undergraduate level in these schools: Arts, Communication, Engineering and Computer Science, Science and Mathematics, and Social and Behavioral Sciences. No deaf students have settled on a "Special Major" at either the undergraduate or graduate level.

Conclusions

Deaf students at CSUN are heavily oriented toward a career in education and, in fact, are attracted to CSUN because of an excellent program in teacher preparation. They tend to major in the School of Humanities at the undergraduate level, where they receive preparatory work required for graduate work within the School of Education. The School of Business does not at this time attract deaf students in any significant numbers.

Since it is clear that the integrated model, in conjunction with such support services as interpreting, leads to academic success and appropriate occupational placement in the

area of education, there is every reason to believe that significant strides could also be made in other areas especially in the School of Business. This should be strongly explored and tested in the near future as the employment opportunities in education may soon reach a "saturation point."

As qualified, well-trained deaf persons sought and found greater employment opportunities in education, there is every reason to believe that deaf persons trained in business fields, particularly at the graduate level, may find greater occupational opportunities.

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RELATIONSHIP BETWEEN DEGREE OF HEARING LOSS AND ACADEMIC ACHIEVEMENT

Harry J. Murphy

In a previous study by Fankhauser (1976) conducted among deaf students at California State University, Northridge (CSUN), little correlation was found between degree of hearing loss and grades earned. Greenberg and Greenberg (1971) in a study conducted among deaf students at Gallaudet College, came to the same conclusion.

This may surprise some who hold to a common belief that achievement (which may be considered to be the acquisition and understanding of experiences as evidenced by test scores and other academic measures) is more directly related to the degree of handicapping condition. This may be particularly true where the situation is as critical as hearing (or otherwise receiving) college lectures and other college experiences. Would it not seem reasonable to expect the lesser handicapped individual who is hard-of-hearing to acquire more experiences

and to be able to demonstrate them in a college setting to a greater degree than the more handicapped student who is profoundly deaf?

Yet Fankhauser concluded that functional hearing acuity has no correlational significance with GPA (grade point average). Greenberg and Greenberg concluded that the belief that hard-of-hearing students would out-achieve deaf students is "utter myth."

Recruiters for the CSUN program frequently face questions from deaf students and their counselors which reflect the common assumption that hard-of-hearing students perform better academically than deaf students. Some of these questions are: Is an integrated college situation (which CSUN offers) more suitable for hard-of-hearing, than deaf, students? Can deaf students successfully compete academically with hard-of-hearing, and normal hearing, students or should they be counseled into more segregated educational settings?

Since critical counseling decisions and personal decisions on the part of deaf persons are involved, it was felt that a close look at the academic progress of deaf and hard-of-hearing students was warranted.

The issue is not entirely settled by the Fankhauser study. Fankhauser used a relatively small sample (N=28) and a self-reporting indicator of hearing loss developed by Schein and Delk (1974) for a national census of the deaf population of the United States. In the Fankhauser study, hearing-impaired respondents considered a series of subjective

statements about their ability to hear and checked off appropriate categories. These statements had previously been correlated for national census purposes with audiometric scores of better ear averages.

Before drawing any strong conclusions about the relationship between degree of hearing loss and grades earned at CSUN, it was felt that a study should be conducted which used a larger sample as well as objective and audiometric data on individual subjects.

The Integration of Deaf Students at CSUN

During the Spring semester of 1976, 156 deaf students (LEA = 92 dB; REA = 93 dB) attended CSUN, a large suburban university of approximately 27,000 students and 1,400 faculty members.

Deaf students attend regular classes with normal hearing students, following the usual curriculum of the university. One indicator of the high degree of academic integration is that less than 1% of the student body (156 deaf students in a student body of 27,000) was enrolled in nearly 10% (450 of 5,000) of all class sections offered by the university during the Spring semester of 1976. If the average class size is 25, of which one or two are deaf and the rest hearing, then about 10,000 hearing students directly shared the college experience with deaf students.

Professors teach in the usual way. Deaf students generally follow an interpreter who translates the spoken word into manual sign language.

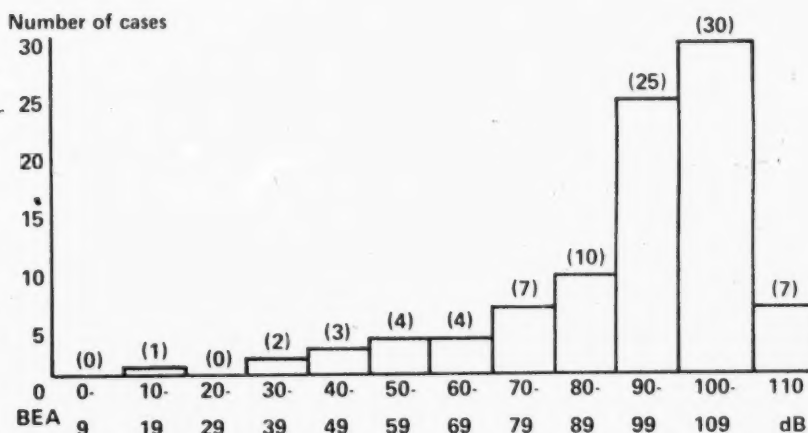
Deaf students are also supported by counselors, note-takers, and tutors and are encouraged to utilize the services offered to the extent they feel necessary to succeed in this integrated setting.

Methodology and Results

Subjects for this study consisted of a sample of 93 of 158 deaf students registered through the service unit for deaf students at CSUN (Support Services for Deaf Students) for the Fall semester of 1975.

Air conduction thresholds from current audiograms were recorded for each ear at frequencies of 250, 500, 1,000, 2,000, and 4,000 Hz. If a subject did not respond at a given frequency, a loss of 110 dB was recorded. Left ear (LEA), right ear (REA), and better ear averages (BEA) were computed by averaging responses at 500, 1,000, and 2,000 Hz.

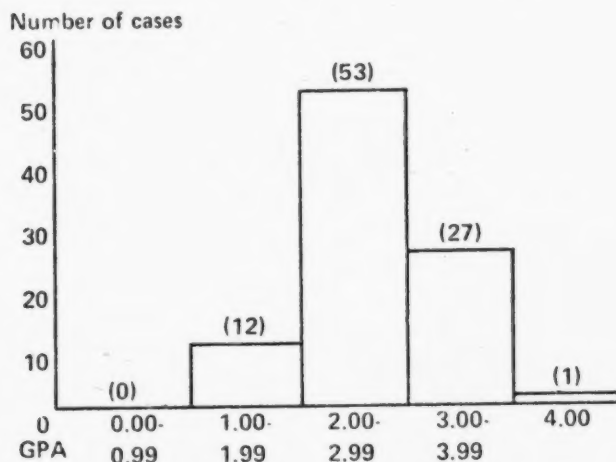
Figure 1
Distribution of Hearing Loss Among CSUN Deaf Students



Grades are assigned to deaf and hearing students alike in the usual way by their instructors and each semester a grade point average (GPA) is computed for each student. GPA is distributed along a continuum of 0-4 grade points: A = 4 grade points; B = 3 grade points; C = 2 grade points; D = 1 grade point; F = 0 grade points.

GPA is computed this way: if a student carried 12 semester hours (four courses, three units credit each) and earned two A's, one B, and one C, his GPA is computed by multiplying the grade points for each grade times the number of units for each course ($4 \times 3 + 4 \times 3 + 3 \times 3 + 2 \times 3$), and dividing the sum (39 grade points) by the total number of semester hours (12). Thus, $39 \div 12 =$ a GPA of 3.25. The mean GPA for the subjects in this study was 2.65.

Figure 2
Distribution of Grades Earned by CSUN Deaf Students



Audiometric data were then correlated with grades earned (GPA) by these 93 subjects for the Fall, 1975 semester.

Table 1
The Relationship Between Degree of Hearing
Loss and Grade Point Average (GPA)

	Frequency	Hearing Loss in dB	r with GPA	Level of Statistical Significance
<i>Left Ear</i>	250	77.3	.10	.18
	500	84.7	.03	.38
	1000	93.4	-.03	.39
	2000	97.5	-.09	.20
	4000	100.1	-.13	.11
<i>Right Ear</i>	250	76.5	.03	.39
	500	85.9	.01	.46
	1000	94.7	.01	.49
	2000	98.3	-.07	.25
	4000	99.9	-.09	.22
	LEA	91.9	-.03	.39
	REA	92.9	-.02	.43
	BEA	89.2	-.03	.36

Discussion and Conclusions

As seen in Table 1, the range of correlation between degree of hearing loss at any frequency and GPA is narrow and relatively close to zero (.10 to -.13). The range of the level of significance is .11 (at Left 4,000) to .49 (at Right 1,000). In no case did the level of significance reach a conventional standard of at least .05. In fact the lowest level of significance (.11) was related with a *negative* correlation indicating that those with a greater hearing loss earned slightly higher grades than those with a lesser hearing loss.

The left ear, right ear, and better ear averages indicate almost zero correlations (in fact, slightly negative

correlations in all three cases) at levels which are not statistically significant.

It is concluded that the present study confirms the finding of Fankhauser and the Greenbergs that there is very little relationship between degree of hearing loss and academic achievement among college students.

The absence of statistically significant relationship between degree of hearing loss and grades earned at CSUN is a meaningful finding and one that speaks well of the ability of deaf students at CSUN to succeed academically in a "regular" university.

The meaningfulness of it is even clearer when taken in conjunction with an earlier finding by Murphy (1976) that all students registered through Support Services for Deaf Students earn grades at approximately the same level as the hearing students on campus.

Taking the two studies together it may be concluded that *not only do deaf students at CSUN do as well academically as hard-of-hearing students, they do as well as hearing students!*

One other factor to consider is that a college population of deaf students represents an attenuated range of intelligence and ability and is not at all representative of a more general deaf population. It is also possible that the characteristics of the deaf student body at CSUN may be quite different from the deaf student body of other colleges.

An additional conclusion to be drawn from this study is that the services offered to deaf students (interpreting,

notetaking, counseling, tutoring) are apparently adequate for their needs and are utilized appropriately to result in academic success.

The question about integrated education for deaf as well as hard-of-hearing students is convincingly answered: the evidence is strong that qualified deaf and hard-of-hearing students succeed academically at about the same rate as hearing students in an integrated setting.

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A BRIEF HISTORY OF THE NATIONAL CENTER ON DEAFNESS: 1960-1979

Harry J. Murphy

- 1960 - Dr. Wayne L. McIntire secures a planning grant from the Federal Office of Vocational Rehabilitation for a "National Leadership Training Program in the Area of the Deaf" (NLTP-D).
- 1961 - The original planning grant results in development and approval of an interdisciplinary curriculum in leadership under the Department of Administration and Supervision.
- 1962 - The first NLTP-D training class begins; results in awarding of MA degrees to 10 participants.
- 1963 - NLTP-D training class offers pioneering adult education classes to deaf community members at First Baptist Church of Van Nuys.
- 1964 - First deaf students enroll at CSUN: two NLTP-D students earn MA degrees in June; an MA candidate in psychology begins studies, and first deaf undergraduate students enroll in September. First use of interpreters in class

as "support service." Birth of "Support Services for Deaf Students" (SSDS).

- 1964 - NLTP-D invents telephone communication devices enabling deaf and deaf-blind persons to make limited use of telephone.
- 1965 - NLTP-D makes training film, publishes manual, and trains deaf and deaf-blind persons in use of the "Speech Indicator" telephone communications device.
- 1965 - "Telewriter" telecommunications device is tested at CSUN and demonstrated before a national audience at Convention of American Instructors of the Deaf, Flint Michigan.
- 1965 - First deaf person comes to CSUN as NLTP-D professional staff member.
- 1966 - 12 deaf students enroll at CSUN; funds for support services come from local service clubs.
- 1967 - 17 deaf students enroll at CSUN.
- 1968 - 33 deaf students enroll at CSUN; funds for support services shift from community service clubs to vocational rehabilitation case monies under administration of local VR office.
- 1968 - Center on Deafness initiates Dan Cloud Award to honor leadership in the field of deafness. First award goes to Dr. Boyce Williams, Director of Office of Deafness and Communicative Disorders, Department of Health, Education and Welfare, Washington, D.C.

- 1968 - Department of Special Education and Rehabilitation establishes credit courses in American Sign Language and Interpreting.
- 1969 - 55 deaf students enroll at CSUN.
- 1969 - Because of the growing numbers of deaf students attracted to CSUN, the need for a more permanent funding base for support services leads to a "block funding grant" from California State Department of Rehabilitation.
- 1969 - Department of Special Education and Rehabilitation secures grant from Bureau of Education for the Handicapped to initiate a Teacher Preparation Program which becomes the first of its kind to prepare teachers of the deaf at the secondary level.
- 1969 - Dan Cloud award goes to Dr. Marshall S. Hester, Retired, Former Superintendent of New Mexico Schools for the Deaf.
- 1970 - 81 deaf students enroll at CSUN.
- 1970 - Drama Department offers first CSUN class to emphasize artistic aspects of sign language through a Sign Language and Drama course.
- 1970 - CSUN receives grant from Bureau of Adult Vocational and Library Programs for "Project DAWN" (Deaf Aadults With Need) to establish adult basic education programs across the country by training "grass-roots" deaf leaders.
- 1970 - Dan Cloud award goes to Dr. Edgar Lowell, Director, John Tracy Clinic, Los Angeles.
- 1971 - 91 deaf students enroll at CSUN.

- 1971 - CSUN receives grant under the Adult Education Act for "Project ABETH" (Adult Basic Education for The Handicapped) to extend the Project DAWN model to other handicapped groups.
- 1971 - CSUN receives grant from Rehabilitation Services Administration for "Project TRIPOD" (Toward Rehabilitation Involvement by Parents Of the Deaf) to sponsor a national workshop and several regional workshops designed to bring together parents of deaf persons, deaf adults, and rehabilitation workers.
- 1971 - Department of Special Education and Rehabilitation initiates a summer master's program designed to allow teachers of the deaf, particularly deaf teachers, to earn an MA degree through summer residency plus extension courses.
- 1971 - The California Legislature, through Assembly Bill 1923, adds Section 23609 to the Education Code calling for the trustees of the California State University and Colleges system to designate one institution as a professional center for training deaf persons and to take all action necessary to facilitate the receipt by such state institution of state and federal funds.
- 1971 - Dan Cloud award goes to Dr. Robert G. Sanderson, Coordinator, Services to Deaf, Division of Rehabilitation Services, Salt Lake City, Utah.

1972 - Fall enrollment of deaf students exceeds one hundred (109) for the first time. More than 200 deaf students served throughout the year at CSUN.

1972 - Pursuant to Assembly Bill 1923, the trustee's Committee on Educational Policy designates CSUN as a professional center for training deaf persons with these words:

"Based on its many years of institutional, State, and Federal support for programs involving deaf persons, California State University, Northridge is recommended for designation as a professional center for training deaf persons pursuant to this law.

"Such designation will bring official recognition to an innovative, nationally recognized program for deaf persons. It will facilitate the University's efforts to gain funding from State and Federal sources. This recognition will designate the University as the primary California institution of higher education to which the Department of Rehabilitation can refer its deaf clients. Faculty and staff recruitment efforts will be enhanced. Deaf students graduating from secondary and junior college programs in California will be provided an opportunity to continue their education in their home state."

- 1972 - CSUN administration approves establishment of a "Center on Deafness" to coordinate the growing number of programs designed to train professional personnel as well as to provide support services to deaf students attending regular classes on campus.
- 1972 - The trustees, in further recognition of the university's ability to serve deaf students and to train those seeking professional careers in working with the deaf, authorize a line item augmentation budget to partially support the work of the Center on Deafness.
- 1972 - The Department of Special Education and Rehabilitation appoints a deaf professor as head of Teacher Preparation Program.
- 1972 - Dan Cloud award goes to Dr. David Denton, Superintendent, Maryland School for the Deaf, Frederick, Maryland.
- 1973 - 116 deaf students enroll at CSUN.
- 1973 - CSUN awards MA degree to 100th deaf person.
- 1973 - Dan Cloud award goes to Dr. Frederick Schreiber, Executive Secretary, National Association of the Deaf (NAD).
- 1974 - 122 deaf students enroll at CSUN.
- 1974 - Southwestern Region Deaf-Blind Center and Bureau of Education for the Handicapped fund a "National Leadership Training Program for Professional Workers in the Area of Deaf-Blind;" modeled after NLTP-D; first participants include two deaf persons.

- 1974 - Center on Deafness initiates "Visiting Deaf Professor" lectureship; deaf teachers from other colleges and universities spend a semester at CSUN to teach, study, and write.
- 1974 - "Law and the Handicapped" summer workshop offered on campus.
- 1974 - CSUN joins a six member "National Interpreter Training Consortium" (NITC) to meet the need for trained interpreters across the country.
- 1974 - Center on Deafness and regional rehabilitation agency cooperate on workshop on "Needs of Minority Deaf Persons."
- 1974 - Dan Cloud award goes to Dr. Hilde S. Schlesinger, Langley Porter Neuropsychiatric Institute, San Francisco and to Dr. Kay Meadow, Director of Research and Dissemination, KDES, Gallaudet College, Washington, D.C.
- 1975 - 152 deaf students enroll at CSUN.
- 1975 - CSUN becomes one of three legislatively stipulated institutions of higher learning to receive funding for Support Services for Deaf Students under Section 625 of the Elementary and Secondary Education Act.
- 1975 - Dan Cloud award goes to Mrs. Marjoriebell Holcomb, Instructor, Ohlone College, Fremont, California and to Dr. Roy Holcomb, Consultant, Office of Santa Clara County Superintendent of Schools, San Jose, California.
- 1976 - 171 deaf students enroll at CSUN.

- 1976 - Center on Deafness publication series initiated with Selected Readings in the Integration of Deaf Students at CSUN and Sign Language Theater and Deaf Theater: New Definitions and Directions.
- 1976 - IBM Corporation assigns executive to Center on Deafness to plan a "New Careers in Business for the Deaf" program.
- 1976 - Dan Cloud award goes to Dr. McCay Vernon, Professor, Department of Psychology, Western Maryland College, Westminster, Maryland and Editor, American Annals of the Deaf.
- 1977 - 192 deaf students enroll for Fall semester; more than 300 deaf students are served in classes throughout the year.
- 1977 - CSUN awards 200th MA degree to a deaf person; deaf-blind MA graduate cited at commencement ceremony for 4.0 grade point average.
- 1977 - Center on Deafness reorganizes; adds Planning and Evaluation unit, Administrative Services unit, and Faculty Liaison person.
- 1977 - Center on Deafness administrators testify before House and Senate subcommittees on handicapped; requested funding received from Bureau of Education for the Handicapped.
- 1977 - California State Department of Rehabilitation awards contract to Center on Deafness to establish a Telecommunications Center.

- 1977 - Dan Cloud award goes to Mrs. Patria G. Forsythe, Staff Director, Subcommittee on the Handicapped, Senate Labor and Welfare Committee, Washington, D.C. and to Dr. Martin LaVor, Senior Legislative Associate, Committee on Education and Labor, Washington, D.C.
- 1978 - Establishment of the Council of Directors (COD) post-secondary organizations for the deaf consisting of the following institutions: CSUN, Gallaudet College, National Technical Institute for the Deaf, Seattle Community College, Technical Vocational Institute, Delgado College.
- 1978 - The President of CSUN approves a name change to the National Center on Deafness to more accurately reflect the national scope of the Center's activities.
- 1978 - Campus Planning Board approves site for location of a National Center on Deafness Building on the CSUN campus.
- 1978 - A Telecommunications Center honoring the memory of Alexander Graham Bell is dedicated.
- 1978 - Dan Cloud award goes to Mr. Edward V. Roberts, Director, State Department of Rehabilitation, Sacramento, California and to Mr. Albert T. Pimentel, Director of Public Service Programs, Gallaudet College, Washington, D.C.
- 1979 - Trustees of the California State University and Colleges system dedicate a building site at the entrance to the CSUN campus as the future permanent home of the National Center on Deafness.

1979 - Dan Cloud award goes to Dr. Ursula Bellugi, Director, Laboratory for Language Studies, Salk Institute, San Diego, California; Mr. Ralph White, Program Specialist, Texas Rehabilitation Commission, Austin, Texas, and Dr. Richard Kinney (posthumously), President, Hadley School for the Blind, Winnetka, Illinois.

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